

## [0092] CLAIMS

What is claimed is:

1. A method comprising:

reading a processing instruction (PI) in an XML data file governed by a solution to determine the solution's origin, wherein the PI contains an entity selected from the group consisting of:

a href attribute that points to a URL;

a name;

a target that includes a character string that identifies an application used to create an HTML electronic form associated with the XML data file; and

a href attribute and at least one of a PI version and a product version;

determining security precautions for executing the solution based on the solution's origin; and

silently installing the solution from a source other than the solution's origin within a sandbox enforcing the security precautions.

2. The method of claim 1, wherein the silently installing the solution further comprises an act selected from the group consisting of:

(i) discovering the solution using the URL in the PI;

(ii) examining the name of the PI to assess the likelihood that the PI includes a solution identifier for the solution; and

when the likelihood exceeds a threshold, discovering the solution using the name in the PI;

(iii) examining one of a URL or an URN in the PI to assess the likelihood that the PI includes a solution identifier for the solution; and

when the likelihood exceeds a threshold, discovering the solution using the one of a URL or an URN;

(iv) discovering the solution using a name associated with the href attribute;

(v) discovering the solution using a name in the PI that is associated with the href attribute; and

(vi) a combination of the foregoing.

3. The method of claim 1, wherein determining security precautions based on the solution's origin includes a high level of security precautions when the solution's origin is a remote server accessed through a global internet.

4. The method of claim 1, wherein determining security precautions based on the solution's origin includes a low level of security precautions when the solution's origin is a locally-accessible memory source.

5. The method of claim 1, wherein determining security precautions based on the solution's origin includes a moderate level of security precautions when the solution's origin is a remote server accessed through an intranet.

6. The method of claim 1, wherein the source other than the solution's origin is a local memory source.

7. The method of claim 1, further comprising, without user interaction:  
opening the XML data file governed by the solution, wherein:  
the solution includes an XSLT presentation application and an XML schema;  
the XML data file can be inferred from the XML schema; and  
portions of the XML data file are logically coupled with fragments of the XML schema;  
executing the XSLT presentation application to transform the coupled portions of the XML data file into the HTML electronic form containing data-entry fields associated with the coupled portions.

8. The method as defined in Claim 7, wherein one or more of the reading, the determining, and the silently installing are performed by the execution of a document manager application that is different from the application used to create the HTML electronic form associated with the XML data file.

**9.** The method as defined in Claim 7, wherein:

the data-entry fields of the HTML electronic form map to a corresponding plurality of nodes of the XML document; and

the method further comprises:

receiving, through the data-entry fields, data input by a user for storage in a corresponding said node in the XML document; and

outputting data in XML for viewing by the user in the HTML electronic form through the data-entry fields via the mapping of the data-entry fields from corresponding said nodes of the XML document.

**10.** The method as defined in Claim 1, wherein the character string includes “mso-InfoPathSolution”.

**11.** A computer-readable medium comprising instruction that, when executed by a computer, performs the method of Claim 1.

**12.** A system comprising:

a display having a screen capable of displaying icons or text representing an XML data file;

a user-input device capable of enabling a user to select the XML data file;

a network interface capable of communicating with a communications network to download an XML data file's solution application;

a computer capable of executing applications and communicating with a local memory source to store the XML data file's solution application; and

a document manager application executable on the computer and configured to:

read a PI in the XML data file from the local memory source without user interaction, wherein the PI contains an entity selected from the group consisting of:

a href attribute that points to a URL;

a name;

a target that includes a character string that identifies an application used to create an HTML electronic form associated with the XML data file; and

a href attribute and at least one of a PI version and a product version;

discover and deploy, without user interaction, the XML data file's solution using the entity.

**13.** The system as defined in Claim 12, wherein the character string includes “mso-InfoPathSolution”.

**14.** The system of claim 12, wherein the discover and deploy further comprises an act selected from the group consisting of:

(i) discovering the XML data file’s solution using the URL in the PI;

(ii) examining the name of the PI to assess the likelihood that the PI includes a solution identifier for the XML data file’s solution; and

when the likelihood exceeds a threshold, discovering the XML data file’s solution using the name in the PI;

(iii) examining one of a URL or an URN in the PI to assess the likelihood that the PI includes a solution identifier for the XML data file’s solution; and

when the likelihood exceeds a threshold, discovering the XML data file’s solution using the one of a URL or an URN;

(iv) discovering the XML data file’s solution using a name associated with the href attribute;

(v) discovering the XML data file’s solution using a name in the PI that is associated with the href attribute; and

(vi) a combination of the foregoing.

**15.** The system of claim 12, wherein the document manager application is further configured to:

open the XML data file governed by the XML data file’s solution, wherein:

the XML data file’s solution includes an XSLT presentation application

and an XML schema;

the XML data file can be inferred from the XML schema; and  
portions of the XML data file are logically coupled with fragments of the  
XML schema;

execute the XSLT presentation application to transform the coupled portions of  
the XML data file into the HTML electronic form containing data-entry fields associated  
with the coupled portions.

**16.** The system as defined in Claim 15, wherein the document manager  
application is different from the application used to create the HTML electronic form  
associated with the XML data file.

**17.** The system as defined in Claim 15, wherein:  
the data-entry fields of the HTML electronic form map to a corresponding  
plurality of nodes of the XML document; and  
the document manager application is further configured to:  
receive, through the data-entry fields, data input by a user for storage in a  
corresponding said node in the XML document; and  
output data in XML for viewing by the user in the HTML electronic form  
through the data-entry fields via the mapping of the data-entry fields from  
corresponding said nodes of the XML document.

**18.** The system of claim 12, wherein the document manager application is  
further capable of silently deploying the XML data file's solution within a sandbox.

19. An apparatus comprising:

- means for displaying a representation of an XML data file;
- means for selecting the XML data file;
- means for reading a PI in the XML data file, wherein the PI contains an entity selected from the group consisting of:
  - a href attribute that points to a URL;
  - a name;
  - a target that includes a character string that identifies an application used to create an HTML electronic form associated with the XML data file; and
  - a href attribute and at least one of a PI version and a product version;
- means, using the entity, for discovering and deploying, without user interaction, a solution application governing the XML data file from an offline memory source;
- means for displaying the HTML electronic form, wherein the HTML electronic form represents a product of the solution application and the XML data file;
- means for enabling a user to enter information into the HTML electronic form;
- means for receiving information entered into the HTML electronic form; and
- means for altering the XML data file to reflect the information received.



**20.** The apparatus of claim 19, wherein means for discovering and deploying further comprises means selected from the group consisting of:

(i) means for discovering the solution application using the URL in the PI;

(ii) means for examining the name of the PI to assess the likelihood that the PI includes a solution identifier for the solution application; and

means, when the likelihood exceeds a threshold, for discovering the solution application using the name in the PI;

(iii) means for examining one of a URL or an URN in the PI to assess the likelihood that the PI includes a solution identifier for the solution application; and

means, when the likelihood exceeds a threshold, for discovering the solution application using the one of a URL or an URN;

(iv) means for discovering the solution application using a name associated with the href attribute;

(v) means for discovering the solution application using a name in the PI that is associated with the href attribute; and

(vi) a combination of the foregoing.

**21.** The apparatus of claim 19, wherein:

the solution application includes an XSLT presentation application and an XML schema;

the XML data file can be inferred from the XML schema; and

portions of the XML data file are logically coupled with fragments of the XML schema;

the XSLT presentation application can be applied to transform the coupled portions of the XML data file into an HTML electronic form containing data-entry fields associated with the coupled portions.

**22.** The apparatus as defined in Claim 19, further comprising a document manager application that includes the means for displaying, the means for enabling, the means for receiving, and the means for altering, wherein the document manager application is different from the application used to create the HTML electronic form associated with the XML data file.

**23.** The apparatus as defined in Claim 19, wherein:

the user enters the information into the HTML electronic form in data-entry fields of the HTML electronic form that map to a corresponding plurality of nodes of the XML document;

the means for receiving information entered into the HTML electronic form receives, through the data-entry fields, data input by the user for storage in corresponding said nodes in the XML document; and

the means for altering the XML data file to reflect the information received maps the data-entry fields to corresponding said nodes of the XML document.

**24.** The apparatus of claim 19, the means, using the entity, for discovering and deploying further comprises means for deploying the solution application within a sandbox providing security based on the solution application's origin.

25. The apparatus as defined in Claim 19, wherein the character string includes “mso-InfoPathSolution”.

26. A computer readable medium comprising instruction that, when executed:  
reads a processing instruction (PI) in an XML data file governed by  
a solution to determine the solution’s origin, wherein the PI contains an  
href attribute that points to a URL;

determines security precautions for executing the solution based on the  
solution’s origin; and

silently installs the solution from a source other than the solution’s origin  
within a sandbox enforcing the security precautions.

27. A computer readable medium comprising instruction that, when executed:  
reads a processing instruction (PI) in an XML data file governed by a  
solution to determine the solution’s origin, wherein the PI contains a name;

determines security precautions for executing the solution based on the solution’s  
origin; and

silently installs the solution from a source other than the solution’s origin within a  
sandbox enforcing the security precautions.

28. A computer readable medium comprising instruction that, when executed:  
reads a processing instruction (PI) in an XML data file governed by a  
solution to determine the solution’s origin, wherein the PI contains a target that

includes a character string that identifies an application used to create an HTML electronic form associated with the XML data file;

determines security precautions for executing the solution based on the solution's origin; and

silently installs the solution from a source other than the solution's origin within a sandbox enforcing the security precautions.

**29.** The computer readable medium as defined in Claim 19, wherein the character string includes "mso-InfoPathSolution".

**30.** A computer readable medium comprising instruction that, when executed:  
reads a processing instruction (PI) in an XML data file governed by a solution to determine the solution's origin, wherein the PI contains a href attribute and at least one of a PI version and a product version;

determines security precautions for executing the solution based on the solution's origin; and

silently installs the solution from a source other than the solution's origin within a sandbox enforcing the security precautions.